

Tarique Anwar Mulla

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SUMMARY

Software Engineer with 4+ years of experience building scalable automation platforms, full-stack engineering tools, and cloud-native testing infrastructure across enterprise and distributed systems. Expertise in Python, Java, FastAPI, Next.js, Selenium, Playwright, API automation, CI/CD pipelines, and AWS cloud infrastructure. Proven track record of improving test coverage, reducing defect leakage, accelerating regression cycles, and delivering production-grade backend services in Agile environments.

TECHNICAL SKILLS

Languages: Python, Java, SQL, TypeScript, JavaScript
Backend & Web: FastAPI, Next.js, Pydantic, REST APIs, scikit-learn, Pandas, joblib
Automation & QA: Playwright, Selenium WebDriver, Cypress, Appium, Postman, ReadyAPI, PyTest, TestNG, JMeter, Locust
Cloud & DevOps: AWS (EC2, S3, IAM, VPC, SNS, SSM), Docker, Jenkins, GitHub Actions, Maven, Git, Linux, Bash
Methodologies: POM, BDD, TDD, Data-Driven Testing, CI/CD Testing, Regression, Integration, API, End-to-End Testing

EXPERIENCE

Trevi Systems Inc.

Apr 2026 – Present

Software Engineering Intern

Remote, USA

- Building full-stack internal engineering tools supporting membrane R&D for a forward-osmosis / reverse-osmosis hybrid desalination platform using FastAPI, Next.js, and Python.
- Developed a process-prediction API serving a trained multi-output Random Forest model (scikit-learn pipeline), exposing 11+ operational outputs (permeate flow, TDS, conductivity, energy consumption) from membrane-configuration inputs.
- Built a tolerance-based historical-run matcher over experimental data with categorical strict-match plus per-column numeric tolerances, ranked top-K results with deterministic distance scoring.
- Implemented a physics-based RO/FO-PRO calculator (van't Hoff osmotic pressure, hydraulic power, full salt balance, auto-detected bypass vs. no-bypass operating modes) with FastAPI backend and Next.js frontend.

Accessium Group Initiative

Sept 2025 – Mar 2026

Software Development Engineer

Remote, USA

- Designed scalable Playwright automation frameworks using Python and Page Object Model (POM), enabling reusable UI and API test automation across Development, Staging, and UAT environments.
- Developed CI/CD automation workflows using GitHub Actions and Jenkins, accelerating release cycles and improving regression reliability while reducing flaky tests.
- Deployed Dockerized TestLink infrastructure on AWS EC2 using IAM, VPC, and SSM for secure access management, and integrated centralized test management for end-to-end traceability.
- Engineered real-time test monitoring and alerting with AWS SNS, automated failure analysis utilities, and managed test artifacts via AWS S3 with boto3, improving defect visibility and stability.

RockyTech

Jan 2025 – May 2025

Research and Development Software Engineer

Boulder, CO

- Developed a BLE-integrated React Native testing interface to validate real-time embedded device behavior and monitor telemetry data across multi-device and edge-case scenarios.
- Implemented automated threshold-based alerting and monitoring workflows to improve anomaly detection, reliability testing, and repeatability of validation workflows.
- Collaborated with embedded engineers to define BLE communication protocols and contributed to technical documentation supporting patent filing and regulatory compliance.

Cybage Software (Client: Amadeus IT Group)

Nov 2020 – Aug 2023

Software Development Engineer in Test (SDET) / QA Engineer

Pune, India

- Led QA and SDET initiatives for enterprise hospitality platforms (Booking Systems, GDS, Meta Search), designing test strategies for functional, integration, regression, and system testing with 95%+ regression coverage.
- Reduced post-release defects by 90% through improved regression automation, early defect detection, and optimized testing processes in Agile environments.
- Developed and maintained Selenium WebDriver automation frameworks in Java, integrated with CI/CD pipelines for continuous testing across release cycles.
- Performed API testing using Postman, ReadyAPI, REST services, and SQL queries; conducted RCA, defect triage, and log analysis in Linux/Unix environments to improve issue resolution.

EDUCATION

University of Colorado Boulder

M.S., Electrical Engineering

Aug 2023 – May 2025

Boulder, CO

Savitribai Phule Pune University

B.E., Electronics and Telecommunication

Aug 2015 – May 2019

Pune, India

CERTIFICATIONS & PATENTS

- AWS Certified Cloud Practitioner (2024)
- Patent: Smart Prosthetic Cooling System – US Provisional 63/643,282 (2025)